Shipboard Environmental Protection News

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INSIDE

EARTH DAY 1998

CNO Sponsors Navy Earth Day Celebration

THE ENVIRONMENTAL PROTECTION, Safety, and Occupational Health Division (CNO (N45)) sponsored Earth Day activities at the Crystal City, VA, Water Park on Wednesday, April 22. Visitors enjoyed games, recycling exhibits, nine Navy environmental displays, entertainment by the Navy Band, and great weather—and took home free tree seedlings, posters, newsletters, and brochures.

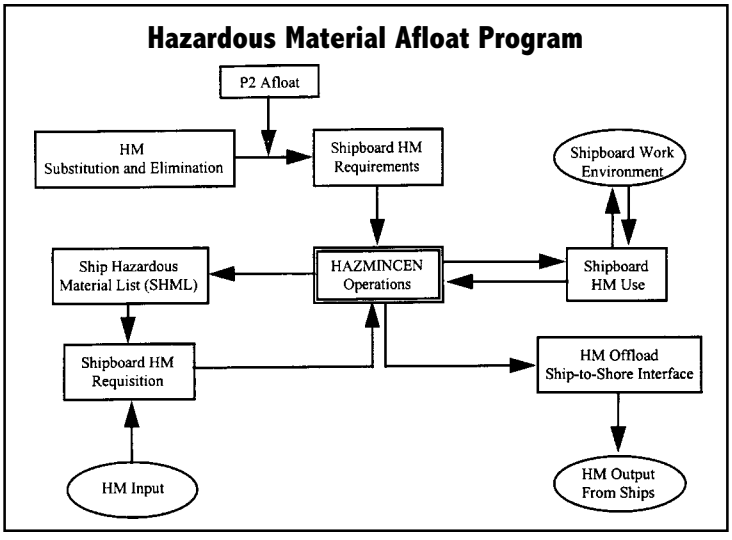
▲SEP News *editor Ms. Inga Scheidemandel with NAVSEA's Earth Day 1998 display, "Environmentally Sound Ships: Navy's Vision of the Future."*

ESS-21 VISION

Managing Hazardous Materials Afloat: Navy's Environmentally Sound Approach

A Primer on the Navy's Hazardous Material Afloat Program (HMAP)

NAVY SHIPS AND SUPPORTING SHORE ACtivities are establishing a comprehensive program to reduce hazardous materials (HM) taken aboard ships and to manage efficiently any HM on board. Adopting most elements of the Navy's *Consolidated Hazardous Material Reutilization and Inventory Management Program (CHRIMP)* and adding substantial efforts to reduce requirements for HM aboard and find suitable nonhazardous substitutes, HMAP will reduce the amount of HM purchased for ships, used and stored on board, and off-loaded as excess HM. HM substitution and elimination efforts focus on identifying targeted compounds and candidate substitute products in the laboratory and decreasing the Fleet's requisition of products containing these targeted compounds. Achieving these objectives helps protect personnel



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Ships Win CNO Environmental Awards

MANY STRONG CANDIDATES DEMONstrated the Navy's commitment to environmental stewardship at this year's CNO Environmental Awards ceremony, held Thursday, April 23, at the Pentagon. Forty-six environmental awards in seven categories (17 subcategories) were presented. Award winners included installations, individuals, and ships. Ship winners are listed below:

Weapon System Acquisition Team:

- New Attack Submarine (PMO 450)
- Surface Combatant of the 21st Century (SC-21)

Environmental Quality:

Large Ships:

- USS *Carl Vinson* (CVN-70)
- USS *Wasp* (LHD-1)

Small Ships:

- USS *Vella Gulf* (CG-72)
- USS *Carter Hall* (LSD-50)

Congratulations to all the 1997 award recipients! The CNO winners will be forwarded to the Assistant Secretary of the Navy (Installations & Environment) to compete for the Secretary of the Navy's environmental awards.

▼*Visiting NAVSEA's Earth Day 1998 display, "Environmentally Sound Ships: Navy's Vision of the Future"* (left to right): *CAPT J.W. Taylor and Mr. Larry Koss (CNO (N45)); Mr. Peter Mullenhard (SEIC); N45's LCDR Rinda Ranch and CDR Rick Evans; and the SEIC's Mr. Dexter Bryce, Dr. William Bailey, and Ms. Anne David*

Is Commercial Waste Management Equipment Possible on Navy Warships?

The Challenge We Face Defending Our Environment and Our Nation

YOU MAY HAVE HEARD THAT THE U.S. Navy is leading the maritime community in developing and using waste-processing technologies that help protect marine life in the world's oceans while we safeguard America's interests around the globe. But did you know that warships are unique because of their mission and special operating constraints? The wastes that ships generate are similar to those generated by shoreside industrial facilities and commercial vessels, but the waste-management practices are not. This is the challenge we face.

Navy ships travel worldwide with no continuous access to land-based facilities for waste management. A ship conducting operations, often far from home port, cannot have its trash collected by a waste-disposal company, pipe its liquid wastes to a municipal wastewater treatment facility, or have its used or excess hazardous materials taken away by specialized haulers. Other differences between naval and commercial vessels:

- **Warships remain at sea for long periods, (commercial ships travel point to point as quickly as possible);**
- **Warships are primarily platforms for weapons and combat systems;**
- **Warships have much larger crews living on board, even when the ship is in port;**
- **Warships have much greater space and weight constraints than commercial vessels; and**
- **Sailors perform extensive repair and maintenance on board.**

Shore facilities and the private sector share the problem of treating waste streams, but the specific solutions are typically quite different. Waste-treatment technologies and equipment that work effectively on shore often do not work on ships because of the space and weight limitations and the harsh, rolling ship environment. Any equipment or system on a Navy vessel must not only perform its intended function effectively; it must also meet strict requirements for the following:

An aircraft carrier is a floating city—without the convenience of the city dump

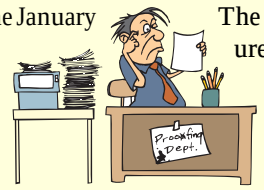
- **Reliability**
- **Maintainability**
- **Size and space**
- **Manning**
- **Electromagnetic compatibility**
- **Acoustics**
- **Shock and vibration tolerance**
- **Weight**
- **Noise**
- **Survivability**
- **Ship's services**
- **Safety and Health**

Very complex trade-off studies are conducted when a new ship is designed, balancing competing space and weight demands for weapons, electronics, damage control, and habitability (crew living) systems. Because of these requirements, the Navy has learned that "off-the-shelf" commercial waste-management equipment is generally not suitable for installation and operation on board. We can take advantage of some shore-treatment processes, but only after special equipment and systems to use them are developed for Navy-vessel use.

☞ **Read this and other issues of *SEP News* to track our progress!**

Oops! We Goofed

CORRECTION: On page 10 of the January 1998 issue of *Shipboard Environmental Protection News*, the "New Ring-Gauge Isolator for Blackwater" article incorrectly captioned both figures.



The captions should read that Figure 1 illustrates the ring-gauge isolator assembly (MACH-ALT 470) and Figure 2 shows the old diaphragm-type gauge assembly.

Congratulations, NAVSEA HQ and Other EPA Ozone-Protection Award Winners!

THE ENVIRONMENTAL PROTECTION Agency (EPA) Stratospheric Ozone-Protection Awards Program, which honors corporations, associations, and individuals from around the world for exceptional leadership, personal dedication, and technical achievements in eliminating ODSs, presented 47 awards for 1997. At the program's annual dinner during the International Conference on Ozone-Protection Technologies at the Baltimore Convention Center in November, five Navy nominees won awards! Congratulations to all of the following ozone champions:

Naval Sea Systems Command: Thanks to NAVSEA's leadership, the newest ships—the San Antonio Class amphibious transport dock (LPD-17), the aircraft carrier USS *Ronald Reagan* (CVN-76), and the New Attack Submarine (NSSN)—will be the Navy's first ozone-friendly ships of the 21st century. The internationally recognized Fleetwide AC&R conversion program confirms NAVSEA's continued dedication to environmental stewardship. NAVSEA-developed ozone-friendly technologies, including solvent alternatives and high-efficiency AC&R designs, are available to DOD, foreign militaries, and commercial industry around the world. NAVSEA's exceptional leadership and technical achievements are helping the Navy become ozone-friendly while protecting the world's environment for tomorrow.

Navy Strategic Systems Programs Fire Control & Guidance Branch: The Strategic Systems Programs Office designs, develops, produces, and maintains the Trident weapon system. The Navy initiated a robust program to eliminate the large use of CFC-113 and methyl chloroform (1,1,1-trichloroethane, or TCA). Draper Laboratory, the guidance system design agent, began intensive research in developing and evaluating ozone-friendly but reliable solvents for precision cleaning and contamination control. Close cooperation with chemical manufacturers as well as in-house research with Draper, Raytheon, Honeywell, Hughes, Litton, General Dynamics, and Kearfott Guidance & Navigation resulted in CFC-113 and TCA being removed from the Trident program.

Robert L. Darwin, NAVSEA Fire Protection Division (SEA 03G2): As Director of the Fire Protection Division, Mr. Darwin is the senior Navy engineer for designing and managing shipboard fire-protection systems. He has provided technical oversight and leadership in research efforts to select Halon alternatives for use on board. Most noteworthy has been the development of a water mist system to protect propulsion machinery spaces on the LPD-17. As a member of the United Nations Environment Program (UNEP) Halon Technical Options Committee, he has shared his Halon-alternatives expertise with other military and civilian organizations around the world.

Richard R. Helmick, Naval Surface Warfare Center, Carderock Division, Annapolis Laboratory: Mr. Helmick led the R&D effort at NSWCCD's Annapolis laboratory, responsible for several achievements that have facilitated the Navy's move toward ozone-

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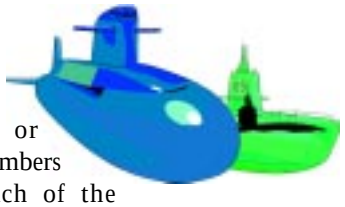
Did You Know...?

- Thanks to the CFC/Halon Elimination Team, all future ship designs (DDG-51 Flight IIA, LPD-17, and NSSN) will have high-efficiency, ozone-friendly AC&R systems.
- Within the last 4 years, the Navy converted the first Navy CFC-114 AC plants to HFC-236fa (now SNAP approved) in the laboratory; the first shipboard conversion aboard the USS Normandy started in May 1998.

CFC-FREE SHIPS

USS *Boise* (SSN-764): the First CFC-12-Free Navy Submarine!



FOR the 140 or so crewmembers aboard each of the Navy's submarines, the atmosphere, and the people who live and work in it, are encapsulated—literally sealed in. To make life safer aboard these vessels, the Submarine Force U.S. Atlantic Fleet (SUBLANT) has taken an environmentally "planned step into tomorrow." With help from NAVSEA and NSWC, the Norfolk, VA-based attack submarine USS *Boise* (SSN-764) replaced the ozone-depleting chemical CFC-12 with earth-friendly HFC-134a as the refrigerant in its ship's stores refrigerators and freezers.

The conversion, performed in cooperation with the SUBLANT Force Maintenance Office, was completed last summer, making *Boise* the first submarine in the Navy to carry such status.

While the Navy is actively eliminating ODSs, DOD holds a reserve of CFC-12 refrigerant for vessels and systems that will not be converted because of life-cycle and other considerations. That supply is expected to last until early in the next century, according to Mr. Joe Thill, the NAVSEA CFC-12 conversion program manager. "Our goal is to get ahead and stay ahead of the stockpile conversions," he explained. "[CFC-12] is getting more and more scarce. If you can't get it, you can't get under way."

The conversion to fluorine-based substances is critical, explains NSWC's Mr. Mike McGovern. "Chlorine... in [CFC-12] separates ozone molecules into two separate substances," which leads to the breakdown of the ultraviolet shield we all depend on. A CFC leak into the environment aboard an underway submarine could be disastrous: the colorless, odorless gas displaces oxygen and could pose health risks to the crew.

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CFC-Free Submarine

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Besides the environmental benefits, the switch to HFC-134a will improve the refrigeration units themselves. "One of the changes is the use of synthetic oil in the compressor, which will extend its life," Mr. McGovern said. The compressor, when equipped with an added oil cooler, will operate about 65 degrees cooler. "High temperatures contribute to wear and tear. Cooler temperatures will increase the life span of that piece of equipment."

While *Boise*'s transformation took a month, future conversions will take only 2 to 3 weeks. This includes bringing existing systems back up to specifications. "Because of submarine system design," says Mr. Thill, "we were able to make the conversions without changing the system or any of its components." This makes the process faster, less costly, and easier for the crew: no special follow-on training is required.

R&D into HFC-134a began 10 years ago, with the first conversion taking place aboard the USS *DeWert* (FFG-45) in 1994. "Our first meeting for submarine conversion was in November 1996," Mr. McGovern said. "In January 1997 we identified *Boise* for conversion. In February, tech manuals and atmospheric controls manuals were being worked on. We began the conversion on August 17."

So far, 119 surface ships have been converted, which equals 485 AC&R plants on 16 classes of ships, Mr. Thill says. The Navy expects to accomplish all scheduled CFC-12 conversions by 2002.

Baffled by a plethora of acronyms? See page 13 for *ALPHABET SOUP FOR NON-NAVY TYPES*, a quick-reference glossary to help guide you through this newsletter!

DOD Strategy to Fight Global Climate Change

MS. SHERRI W. GOODMAN, DEPUTY Under Secretary of Defense for Environmental Security, revealed DOD's strategy to combat global climate change (global warming) in her speech at the First International Workshop on the Military Role in Climate Protection, held in Reston, VA, on November 7, 1997.

Ms. Goodman described DOD's "two goals to combat climate change." The first goal is for the U.S. DOD and its allies to "conduct military operations with trained and ready forces" (i.e., peacekeeping operations, disaster relief, humanitarian assistance, noncombatant evacuation, maritime escort, migrant rescue, and support and deployments to quell civil disturbances) *without* exceeding greenhouse gas emissions targets. DOD also wants no countries to be forced to choose between their domestic economic growth and international military operations support.

DOD wants no countries to be forced to choose between their domestic growth and international military operations support

The second part of the strategy is to "reduce greenhouse gas emissions from our day-to-day operations and training activities in a way that is consistent with National security goals." DOD, the largest energy user in the Federal government, used about 1.4 percent of the total U.S. energy consumed in FY 1996. Of this, about 58 percent went to operations and training in military tactical and strategic systems; facilities and non-tactical vehicles consumed 42 percent. Ms. Goodman stated, "This distinction is important. Our National security concerns are focused on the first category—operations and training. We are not seeking special treatment for our facilities and non-tactical vehicles," for which DOD will achieve reductions by "improving its energy management." DOD efforts in this area:

1. **Increasing energy efficiency in new construction** by 30 to 50 percent by FY 2000 (compared to existing facilities).
2. **Increasing use of Energy Savings Performance Contracts**, which use private investment capital and expertise to implement energy- and cost-saving projects in DOD facilities.
3. **Working with the private sector to improve energy efficiency** in diesel and high-performance turbine engines and developing partnerships with private industry to improve efficiency of our mobility and weapons systems.

Ms. Goodman closed her speech by stating, "Part of the solution to reduce energy use and reduce greenhouse gas emissions in the future will rest in applying the same pollution-prevention philosophy that we now use to reduce pollution in the design of our weapon systems and at our installations. In the same way, we can abate greenhouse gas emissions and reduce life-cycle costs . . . As our nation moves to develop policies to adjust to global climate change, DOD will provide leadership in both environmental security and National security. Achieving both goals is our climate change strategy in the months and years to come."

For complete text of the speech, see the climate page of the Navy SEIC Web site at http://www.navyseic.com

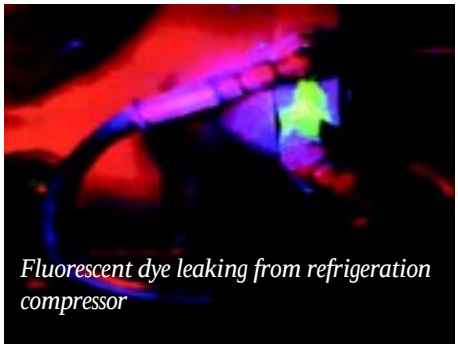
Using SEP News for Your Benefit: The SEIC Newsletter Is a Forum

At the Navy SEIC, we hope that *SEP News* readers will use this newsletter as an open, informal forum for dialogue among the ship environmental community about your concerns and issues. Send your questions along and *SEP News* will publish the answer. *SEP News* is for you, so please feel free to tell us what's on your mind!

The Latest on Refrigerant Detectors

Leak Detectors

THE FLEET NOW WIDELY USES FLUORESCENT-dye leak-detection kits, in accordance with In-Service Engineering (ISE) advisory 002-97 (NSWCCD-SSES message 261700Z FEB 97). This method injects a dye into AC&R systems to make refrigerant leaks appear fluorescent under ultraviolet "black" light. Ships may now requisition all necessary kit components from the stock system (see Allowance Equipment List (AEL) 2-870005149) by submitting 4790 CK forms as appropriate. Planned Maintenance System (PMS) cards have been issued, and a technical manual (0910-LP-004-4520) provides comprehensive information.



Fluorescent dye leaking from refrigeration compressor

Also, NSWCCD-SSES has tested the latest commercial leak detection equipment using both HFC-134a and HFC-236fa refrigerants and developed three new Commercial Item Descriptions (CIDs). These CIDs will be used for future acquisition to promote competition among suppliers, allow for future advances, and ensure the Navy gets a quality product at minimal cost. One CID will be used for the fluorescent dyes, another for the ultraviolet lamp and kit, and the third for portable electronic "sniffers" used in addition to dyes. All three CIDs have been submitted to the NAVSEA Standards Improvement Board.

Permanently Installed Monitors

New refrigerant monitors can detect various refrigerant types at multiple sampling locations and are much more reliable than older "halocarbon monitors" now on board ships. The new monitors sample continuously, record trace refrigerant concentrations to assist ship's force in maintenance and repair, and set off an alarm if the concentration becomes hazardous to personnel. Shipboard installation of new monitors is expected to reduce replacement refrigerant costs and maintenance, resulting in return on investment in 3-1/3 years. Future implementation plans are in the works.

Purchasing off-the-shelf refrigerant leak monitors directly from vendors, however, is not recommended. A few systems have been installed for prototype trials. Tests performed at NSWCCD-SSES and aboard the USS *Anzio* found that some monitors are very promising but need modifications to meet certain Navy-specific requirements. A new performance specification has, therefore, been developed.

Refrigerant monitor testing at NSWCCD-SSES shows promise

Your Technical POC: Mr. Jim Winward, NSWCCD-SSES, 215/897–8783, DSN 443-8783, winward@mailgate.navsses.navy.mil

CFC-114 Conversion Kit Testing Complete

THE 200-TON CG-47-CLASS AIR-CONDITIONING plant that was converted to operate with ozone-friendly refrigerant HFC-236fa has successfully completed shock and vibration testing at Hi-Test Laboratories in Arvonia, VA. This completes all laboratory qualification testing of the prototype CG-47 conversion kit. The AC plant has been shipped to York International for post shock inspection and rebuild and will be returned to NSWCCD's Annapolis laboratory for long-term evaluation and training. A shipboard installation validation and at-sea demonstration of two CG-47-Class AC plants is now being performed on the USS *Normandy* (CG-60) as of May 1998 in Norfolk Naval Shipyard.

In related news, the Navy awarded a contract to York International on March 25, 1998, for kits to convert 200-ton CFC-114 centrifugal compressor AC plants to operate with ozone-friendly refrigerant HFC-236fa.

The basic contract is for 12 kits, with delivery of the first kits by December 1998. These kits will be installed on CG-47-Class ships in FY 1999. The contract also contains options to purchase up to 36 200-ton conversion kits in FY 1999 and FY 2000.

Do you have any empty refrigerant or Halon cylinders? If so, please return them to Defense Supply Center Richmond!

Your POC: Mr. Steve Minus, DSCR, 804/279–5203, DSN 695–5203

MILSPECs Update

- **MIL-E-24715 (Extinguishers, Fire, Vaporizing Liquid (Bromochlorodifluoromethane, Halon 1211))** has been cancelled by Notice 1, dated 7 June 1997, and is not superceded by another document.
- **MIL-I-43705 Revision D (Ice Cream Makers, Shake Makers, and Combination Ice cream/Shake Makers (Soft Serve)**, has been cancelled by Notice 1, dated 17 September 1997 and is not superceded by another document.

NAVSEA and NAVSUP Continue to Reduce Waste at its Source!

NAVSEA AND NAVSUP are working hard to manage all shipboard waste streams and reduce all solid waste at its source. This includes minimizing the amount of plastics brought aboard ships, which will reduce the significant burden of sorting, processing, and stowing used plastic materials on board for land disposal. But source reduction also includes a lot more. NAVSUP expanded the goals of the successful *Plastics Removal In Marine Environment (PRIME)* Program. The new program, *Waste Reduction Afloat Protects the Sea (WRAPS)*, moves beyond PRIME with the goal of reducing all materials that generate solid waste aboard ships.

A WRAPS steering group has targeted areas for waste reduction based on the results of solid-waste-characterization studies conducted aboard ships of the USS *George Washington* battle group in 1996, which indicate that the major constituents of a ship's solid waste are cardboard and paper. Because much of the cardboard waste comes from discarded packaging, the WRAPS office is evaluating several *reusable packaging concepts*. The most promising is bulk, collapsible shipping containers as an alternative to fiberboard tri-wall boxes for consolidating supply loads. Reusable containers for transporting food items are also under evaluation. For paper waste reduction, WRAPS is evaluating the ongoing efforts of CD-ROM publications and electronic forms.

The WRAPS office also is developing training and awareness materials: a video tape, solid-waste management guidelines for surface ships and submarines, and a guide for vendors to enlist proactive help from Navy local suppliers.

Also under evaluation are *rayon cord strapping, nonplastic adhesive deck covering, reusable aprons, sonobuoy components,* and *gun plugs*. As alternatives become available, the

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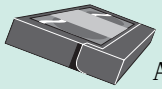
New Medical Waste Technology R&D

THE *AFLOAT MEDICAL WASTE MANagement Guide, OPNAV P-45-113-93*, issued in May 1993, provides guidance to shipboard personnel on the safe and healthful management of ship-generated medical wastes. The Fleetwide Environmental Survey that NAVSEA conducted in July 1997, however, indicated that medical waste management issues still exist, such as insufficient sterilization equipment and inadequate storage space on some ships.

Based on the survey and other input from ships' personnel searching for solutions, NAVSEA recently commenced a medical waste RDT&E effort through NSWCCD Code 632. The objective: to identify, test, and evaluate commercially available equipment, material, process changes, management practices, and emergent technologies that will ensure safe and effective management. Activities interested in providing feedback to assist in this effort are encouraged to contact the RDT&E POC at the end of this article.

Medical Waste, Other NAVOSH Videos Are Available Now



A new video provides guidance for safe medical waste handling and follows the *Afloat Medical Waste Management Guide* mentioned above. To obtain your copies of "U.S. Navy Presents Management of Medical Waste Afloat" (PIN #805974) or any other NAVOSH video, contact:

Norfolk Regional Electronic Media Center
Building W3139770
Decatur Avenue, Suite 250
Norfolk, VA 235113292
757/444–1468 or 4011; DSN 564
Fax 757/444–3711

Your RDT&E POC: Mr. Kiet Ung, NSWCCD 632, commercial 301/227–5235, DSN 287–5235, ung@oasys.dt.navy.mil

NAVSEA, Others Win Ozone Awards

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friendly technology. Mr. Helmick led the R&D that correctly identified polyol ester lubricants as the proper match for AC&R systems using HFC-134a. He also developed modifications for the conversion of CFC-12 AC&R plants to HFC-134a. In addition, he led the development of a new family of HFC-134a AC&R plants for new-ship construction, as well as modifications for the conversion of CFC-114 AC plants to HFC-236fa. Mr. Helmick recently left NSWCCD to become Director of NAVSEA's Climate Control Systems Division (SEA 03L2).

Bruce G. Unkel, NAVSEA, Head of AC&R/Chilled Water Systems Branch (SEA 03L22): Before the Montreal Protocol, Mr. Unkel recognized that the Navy would need an extensive and aggressive program involving Navy laboratories and industry to convert the installed shipboard CFC AC&R systems and develop new HFC-134a systems. To ensure protection of the environment, without negative impact on the Navy's National defense mission, Mr. Unkel started the planning and budgeting that evolved into the Navy's highly successful ODS Elimination Program.

The PWP status as of May 1998: All units delivered; 150 ship installations (82% of the Fleet) done!*

***Well ahead of the Congressional milestone (75 percent by July 1998), the Navy will outfit the entire Fleet with PWPs by the 31 December deadline.**

PROGRAM UPDATE

Shock-Testing Navy Equipment for Safety

by Sean Gill

TWO LONG, DRAWN-OUT BLASTS ON AN alarm precede the technician's stoic countdown: 3…2…1. A mechanical release clacks and the 3,000-lb hammer swings heavily through a pit in the concrete floor, gathering momentum for an ominous purpose. My test specimen is securely attached to a large metal table on the receiving end of this impending goliath blow. With a thunderous clang, the hammer strikes, the table jumps to its stops, and a cloud of debris flies everywhere as a metallic bang resonates throughout the building. I hope the pieces raining down from near-ceiling height are not part of my equipment. Such is the experience of witnessing your first hammer blow in a MIL-S-901D (Navy) shock test, where hearing protection is mandatory, the object of the test is to break the machine and, if it hasn't happened already, the shock machine has eight more attempts at doing so.

I had the opportunity to oversee shock testing of all the Navy's solid-waste management equipment—the plastics waste processor (PWP), large and small solid waste pulpers, and the metal/glass shredder—from February 24 to March 1, 1997, at Noise Unlimited, Inc., in Annandale, NJ. It was an interesting and noisy experience, to say the least.

Why Shock-Test Equipment?

Why does the Navy go to such lengths to ensure that shipboard equipment designed to process garbage meets such stringent requirements? One word answers that question: Safety. Safety of personnel and other critical equipment. It also is shock-tested to ensure that it will withstand the shock loads imposed on the ship during wartime. Depending on the shock-grade classification, this means that the equipment must continue to operate (Grade A) or not come apart and produce projectiles that could harm personnel or damage other Grade A equipment (Grade B). The solid-waste management equipment is not critical to a ship's war-fighting capability and as such, was designated as Grade B. This classification doesn't reduce the severity of the loads imposed on the equipment during the test, but it is okay if the machinery doesn't function afterwards.

Three Categories of Shock Tests

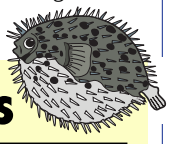
The equipment's weight and size governs which of the three categories of shock tests it falls into: lightweight, medium-weight, and heavyweight. The first two categories are tested on shock machines that employ a hammer to transmit the shock load to the equipment; the third is performed on a floating barge that employs explosive charges detonated in the water to simulate the shock loads. The solid-waste management equipment fell into the medium-weight category and was tested on the medium-weight shock machine, also called a medium-weight table.

Each shock test requires a series of three hammer blows in each of three axes for a total of nine hammer blows. The 3 axes are vertical (i.e., level orientation), inclined 30 degrees, and inclined 30 degrees again after rotating the equipment 90 degrees. A typical 3-blow series might be as follows: 2.25' hammer height with 3" of table travel for blow number 1; 3.25' hammer height with 3" of table travel for blow number 2; and 3.25' hammer height with 1.5" of table travel for blow number 3. The maximum hammer height allowed by the MILSPEC is 5.5'!—and several of the solid waste machines were treated to that loving caress.

Five shock tests were conducted on the equipment: one each on the large and small pulpers and the metal/glass shredder; and one for each piece of the PWP, the compress-melt unit (CMU) and the closed-loop cooling unit (CLCU). The CMU, the first to be shock-tested, passed. In fact, four of the five systems met the Grade B shock requirements and passed the initial shock test. Only the CLCU failed, but it was redesigned and retested in 1997, and this time it also met the Grade B requirements and passed the shock test.

Your POC: Mr. Sean Gill, 412/466–9020, sgill@etd.geo-centers.com

More Solid-waste Equipment Conferences



Last year's two solid-waste conferences in San Diego, CA, and Norfolk, VA, exchanged information and lessons learned on solid-waste equipment installation, design, operation, maintenance, and ship organization. Feedback was extremely useful to NAVSEA in improving the equipment's deployment of the PWPs, pulpers, and shredders.

To continue communication between headquarters and operational units, NAVSEA and TYCOM representatives are planning two more such conferences to be held on each coast: one 24–25 August at Naval Base Norfolk and one 10–11 September in San Diego (see page 15 for details).

Conference attendees should be familiar with the program. Each facility will seat 120 people.

Your POC to confirm your attendance: Ms. Debbie Holter, NAVSEA 03L1M, 703–602–8144 x251

INTERNATIONAL

U.S. Navy Collaborates with Other Navies to Protect the World's Oceans from Plastics

The Canadian navy has bought about 14 U.S. Navy shipboard plastics waste processors (PWPs) for their ships, and the Dutch government plans to acquire one PWP for testing and evaluation. Keep reading *SEP News* for international updates!

The U.S. Navy PWP compresses and sanitizes shipboard plastics waste at a 30:1 ratio

Navy Trash Busters Survey Aircraft Carrier's Solid-Waste Generation and Equipment

A NAVSEA TEAM CONDUCTED A SOLID-waste survey aboard the USS *John C. Stennis* (CVN-74) in the fall of 1997. The *Stennis* is the first aircraft carrier to carry a full complement of solid-waste processing equipment, including metal/glass shredders, food/paper/cardboard pulpers, and plastics waste processors (PWPs). Data from this Trash Busters' survey will help fine-tune the CVN-68-Class PWP SHIPALT and validate plans for pulper and shredder installations starting later this year.

During the 14-day survey, the team confirmed design waste-generation rates and equipment locations, evaluated the utility of the incinerator, and assessed manpower needs. They measured over 104,000 lb of solid waste (metal/glass, plastics, paper, cardboard, wood, textiles, and food). The observed waste-generation rate of 1.6 lb/person-day was about half the design rate of 3.06. Plastic generation was down from 0.20 to 0.13 lb/person-day. Design rates were derived from several NSWCCD studies conducted over 6 years but never performed on an aircraft carrier (CVN). The reduced rates are likely the result of economies of scale associated with a CVN and the impact of the pollution-prevention (waste-minimization) efforts of NAVSUP's PRIME and WRAPS programs.

The real story of this survey is the high degree of cooperation between the Naval Reserve Force; Commander Naval Air Force, U.S. Atlantic Fleet; Naval Manning and Analysis Center, Program Executive Officer for Carriers, Littoral Warfare, and Auxiliary Ships; and NAVSEA in pulling the team together. Thanks to this partnering, and the teamwork by all participants, the Navy has achieved a more realistic solid-waste-management equipment suite design, based on the current and anticipated future operational profile of the CVN-68 Class.

Trash Busters Team (left to right): *Mr. Sean Gill, GEO-CENTERS, Inc.; LCDR Jeff Messier, NR NAVSEA Det 1206; CAPT Walter Malec, NAVSEA DET 1206; ENS Robert Buckingham, NR NAVSEA DET 419; CAPT Robert Kingsbury, Commanding Officer, NR NAVSEA DET 1206; CDR George Aprahamian, NAVSEA DET 1206; MMC Dave Behringer, USS* George Washington *(CVN-73); and Team Leader LCDR Steve Markle, SEA 03L1B. Not pictured: EMCM Scott Bell and HTCS James Campbell of the Naval Manning and Analysis Center.*

New Pulper/Shredder Production Contracts

THE NAVY AWARDED TWO CONTRACTS IN November 1997 to produce solid-waste pulpers and metal/glass shredders sufficient to outfit all operational ships that require them and all new-construction ships approved by Congress. First delivery of the equipment for Fleetwide integration will occur in June or July 1998.

To assure affordable life-cycle cost and equipment sustainability, the Navy has completed all training, provisioning, and logistics development for the pulpers and shredders. Ship-specific installation designs are under way; installations should begin in August 1998.

This equipment has undergone operational testing on seven ships and is fully installed on the USS *John C. Stennis* (CVN-74). The Navy is on track to completely install pulpers and shredders by 31 December 2000.

Pulpers and shredders were developed as a result of the Navy's extensive, multi-year RDT&E effort to provide ships with technically practicable shipboard solid-waste processing capability that will implement the APPS requirements.

NAVSUP Is WRAPin'

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Fleet will be informed via message, newsletters, and SALTS.

Questions? Comments? Ideas?

We welcome your suggestions, comments, and/or recommendations for improved solid-waste reduction and management.

Your POC: Ms. Vickie Edgar, WRAPS Program Manager, 717/790–5623/4172, DSN 430; fax 717/790–3480; DSN 430; vickie_edgar@icpmech.navy.mil

OILY WASTE UPDATE

New Oil-Content Monitor Calibration Program Saves Time, Reduces Pollution

TO REDUCE THE RISK OF OIL POLLUTION, all Navy ships are required to have an oil/water separator (OWS) and an oil-content monitor (OCM). Because the current OCM model ships use, the ET-35N, requires periodic calibration to ensure that it accurately determines the oil concentration in OWS effluent, NAVSEA 03L12 has established a calibration facility at NSWCCD-SSES in Philadelphia, PA.

The sample-and-detection subassembly (SDA) and processor-printed circuit board (PCB) are calibrated as a matched set by processing precise quantities of oil. But because the procedure is complex and needs specialized laboratory equipment, ship's force cannot perform the calibration. NSWCCD-SSES, therefore, has established a rotatable pool of calibration kits, each comprising a calibrated SDA and processor PCB set and an elapsed-time indicator (ETI). Ship's force will have the kit in hand before removing the OCM's old parts. This pool, therefore, will reduce the time required to receive kits and minimize the downtime for the oil-pollution abatement system.

After 2,000 operating hours on the OCM, a ship is to perform the following:

1. Order a calibration kit from NSWCCD-SSES, Philadelphia, Code 631 (215/897–7639);
2. Upon receipt of the calibration kit, replace the old SDA, processor PCB, and ETI with those in the calibration kit; and
3. Return the old SDA and processor PCB to NSWCCD-SSES in the same container that the calibration kit was sent in.

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Your NSWCCD-SSES POC: Mr. Ray Morales, Code 631, 215/897–7639

MACHALT OF THE MOMENT

Sewage: Shipboard Sanitary Waste System Transfer Pump Over/Under Load Protection

VARIOUS ABNORMAL OPERATING SITUATIONS cause shipboard sanitary waste system transfer pumps to fail. Clogged suction or discharge piping and failed tank-level sensors that make the pump run dry are just two scenarios that could lead to pump failure by significantly damaging the pump and motor, most commonly the pump's mechanical seal. Damage to these pumps can result in the need to close sanitary spaces and require ship's force to repair a pump contaminated with sewage.

How can ships avoid these situations? The new *Machinery Alteration (MACHALT) 469*, the motor overload/underload current monitor developed by the Naval Ship Systems Engineering Station (NAVSSES) Codes 631 and 1652, installs Time Mark® Model 422 over/under load monitors (see photo) in sanitary waste transfer pump motor controllers. This monitor detects motor overload (a result of clogged piping) and underload (from a pump running dry) and shuts down the pump after a preset time delay. This monitor includes a true motor-power feature that incorporates voltage, current, and power factors into one sensor/monitor. Because it monitors actual motor power, the TimeMark® Model 422 is more sensitive than a current-only monitor. The monitor requires a current transformer to factor out the three phases present in transfer-pump motors and a matching current transformer to adapt the monitor to a specific motor size. It also is equipped with trip and restart delays, both of which may be activated or deactivated. A bypass switch allows for corrective maintenance or manual operation tasks that require the monitor to be disabled. All required equipment can be installed inside existing motor-controller enclosures in most cases.

Both land-based and shipboard testing were performed on this new motor-load monitor. A sanitary waste transfer pump motor controller underwent land-based concept-verification testing at the Sanitary Waste Test Site at NAVSSES. Initial shipboard testing was accomplished on the USS *John F. Kennedy* (CV-67), and the MACHALT 469 prototype was installed on the USS *Stout* (DDG-55). TimeMark® monitors, current-cancelling transformers, current transformers, bypass switches, and associated wiring changes were installed and successfully tested on the *Stout*'s forward vacuum, collection, holding, and transfer system's sewage transfer pump controller.

TimeMark® 422 over/under load monitor helps avoid sewage pump failure

Your POC for MACHALT 469 information: Mr. Ernest Durelli, SSES Code 631, 215/897–7572, DSN 443–7572, durelli@mailgate.navsses.navy.mil

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PROGRAM UPDATE

How Ships Manage HM

continued from page 1

and the environment while reducing costs. CHRIMP implementation on ships involves the same basic elements as ashore:

- Use of an authorized-use list, the *Ship Hazardous Material List (SHML)*, that identifies authorized, restricted, or prohibited HM;
- Establishment of a *Hazardous Material Minimization Center (HAZMINCEN)* for centralized HM distribution and reutilization;
- Operational procedures for material issue and turn-in; and
- Inventory management measures.

Depending on ship size, the HAZMINCEN on a ship can consist of a designated central office in conjunction with flammable-liquid storerooms or a specially designed and constructed mobile reuse center. Centers are equipped with the *Hazardous Inventory Control System (HICS)*, which provides an on-line listing of HM in stock, material requisitioning processing, inventory tracking (issue and turn-in), and reporting capabilities. Material issue and turn-in procedures are similar to those ashore. HM is bar-coded for tracking and issued to approved users. At the end of each work day or before, the unused portion or the empty HM container is returned to the HAZMINCEN. Material that can be used again will be repackaged and returned to storage. If the material cannot be reused, it is stored until properly off-loaded ashore.

The relationships of the HAZMINCEN and other elements of the HMAP are shown in the diagram on page 1. The SHML is described in more detail in the article at right. The HM substitution and elimination effort will be described in a future issue of this newsletter. *SEP News* also continually reports on accomplishments of the P²A program, which aims to reduce the excess HM generated on ships, among other things.

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Your POC for proper ship HAZMINCEN locations: Mr. Bruce Lundy, NSWCCD Philadelphia Code 631, 215/897–7640, DSN 443–7640

Shipboard Hazardous Material List Improves

TO ALLOW FOR ADEQUATE LIFE-CYCLE control and management of hazardous materials (HM) on board, one document lists all the HM authorized for ship use: the *Shipboard Hazardous Materials List (SHML)*. Naval Inventory Control Point (NAVICP) Code 0541 publishes and updates the SHML quarterly on the Hazardous Material Information System (HMIS) CD-ROM and distributes it to afloat commands. Only the HM authorized by the SHML may be procured for ships unless COs personally approve and sign requisitions for others.

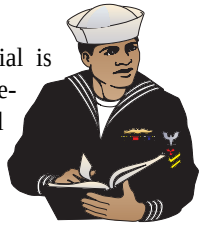
SHML Feedback Report System

To address new and emergent Fleet requirements, NAVSUP instituted the SHML Feedback Report (SFR) System as a means to add materials to the SHML. To recommend an addition to the SHML, with or without NSNs, ships must submit *SFR form 1400*, available on the HMIS CD-ROM. This system helps expedite Fleet input to the SHML by providing streamlined procedures for both Type and System Command review. (NAVSUP message 111752Z Jan 94 describes the process for submitting an SFR; copies are available from the POCs listed at the end of this article.)

Engineering, Industrial Hygiene Review

NSWCCD Philadelphia Code 631 supports the SFR process by providing both engineering and industrial hygiene review of recommended HM. They compare the materials recommended in the SFR with the SHML to ensure that the requested material has *unique characteristics not inherent in currently used materials.*

The life-cycle manager and/or in-service engineer who has cognizance over the equipment, system, or process that the recommended HM pertains to validates the recommendation. Once he/she determines that a valid requirement exists, he/she makes an environmental, safety, and health assessment of the recommended material. A final review results in a recommendation for approval or disapproval. If a material is added to the SHML, results of the industrial hygienist's review, including recommended personal protective equipment and handling precautions, are provided to the life-cycle manager and in-service engineer for inclusion in supporting documentation (e.g., maintenance requirement cards).



SFR System Helps the Sailor

The SFR system gives the Sailor the opportunity to identify deficiencies in equipment/system maintenance documentation and also improve maintenance practices through the use of alternative materials. Feedback reports that recommend less hazardous materials than those specified for a particular maintenance action are strongly encouraged. A standard Preventative Maintenance System or Technical Manual Feedback, however, should be submitted if a recommended material is already on the SHML. These SFRs, also encouraged, are important to HM substitution efforts under way.

The SFR justification is the key to bringing these actions to the attention of the authority who can evaluate the benefits of using new materials or correcting deficiencies in existing documentation. *Please Note: The feedback form must be completely filled out and should identify the maintenance requirement for the material and provide specific justification for the use of the recommended material over the currently authorized material.*

Reducing and Consolidating SHML

The SHML feedback-report process requirement to determine whether the recommended material has unique characteristics not inherent in materials on the SHML has been difficult to satisfy, because numerous NSNs (excluding unit of issue or size) listed on the SHML are used for the same or similar application. Researching each of these NSNs and determining the military or com-

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NSWC Reduces and Consolidates SHML

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mercial specification of the material, if one exists, has proven to be impractical and has delayed the response to many SFRs.

In addition, some of the NSNs currently listed as authorized for a particular application do not meet the NSWCCD's screening criteria. These criteria, established for approving products for shipboard application, include whether the product contains chemical families targeted for elimination or listed as confirmed human carcinogens or ozone-depleting substances. The criteria also consider the product's flashpoint, volatile organic compound content (established by material type and application), pH, and corrosiveness. Products that do not meet the criteria are targeted for minimizing or substituting; they are deleted from the list if acceptable alternatives are already on the SHML.

New CIDs for Specific Fleet Applications

NSWCCD plans to develop Commercial Item Descriptions (CID) for products that would satisfy a specific Fleet application (e.g., glass cleaners, floor wax strippers, and insect repellants). The CID would be based on existing commercial specifications, or a new specification would be developed, based on currently available products that meet Fleet requirements. The CID would be written to reflect the screening criteria to prevent non-compliant products from qualifying. Together with the Items Manager for the application, one NSN (excluding unit of issue or size) would be established for Afloat Navy use for all products that comply with the CID. Unless a new application is identified, any material recommended by a feedback report should fall under an existing application NSN/CID. The first applications being evaluated are floor finishes and strippers.

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Your NAVSUP POC: CDR Ed Sweeney, NAVSUP 424, 717/791–8157, cdr_ed_sweeney@navsup.navy.mil

New Products for Navy's West Coast Smart Ship

"Gators" Get P² Equipment for the Amphib of the 21st Century

THE POLLUTION PREVENTION (P2) SUITE on the USS *Rushmore* (LSD-47), the West Coast's "Smart Ship," incorporates 3 years of experience and lessons learned from the P² Afloat (P²A) fleet. Originally planned to incorporate some of the initiatives implemented on the East Coast's Smart Ship, the USS *Yorktown* (CG-48), the *Rushmore* actually has built upon them. *Rushmore*'s suite of P² equipment is tailored to the requirements of an amphibious vessel vice those relevant to a smaller combatant. Similar to that of other amphibs supported by the P²A Team, the *Rushmore* suite includes *parts washers, standard paint locker modifications*, the *mercury ion-exchange cartridge*, and an *improved process for distributing batteries* on board and reducing the associated battery waste.

Although the main waste-stream targets continue to be paints, solvents, and rags, three of the many P²A products to be installed on the *Rushmore* are new to the program: *low-mercury fluorescent lamps, rechargeable batteries*, and a *portable steam vapor-cleaning system*. Because the bulbs of low-mercury fluorescent lamps need not be disposed as hazardous wastes, these lamps will reduce waste-disposal costs. Rechargeable batteries and chargers for personal items and portable lanterns will reduce battery waste. The portable steam vapor-cleaning system will be used in the galley and mess spaces to clean and sterilize without cleaning products or solvents and will reduce rag use.

Some tried-and-true P²A products also will be installed:

- **Five aqueous parts washers (one new-to-the-program make and model and four small washers (two standard and two modified))**
- **Hand pumps and spray bottles**
- **High-volume, low-pressure (HVLP) paint guns**
- **Backpack vacuum**

Tried and true: High-volume, low-pressure (HVLP) paint gun

- **Paintbrush holders**
- **Maintenance-free batteries**
- **Mercury ion-exchange cartridge**
- **Paint-gun cleaning station**
- **Paint dispensers (including 2-part dispensers)**
- **Paint touch-up pens**
- **Photoluminescent labels**
- **Vortex component cooler gun**
- **Vacuum sanding system**

Responding to ships' feedback, the P²A Team continues to revamp existing equipment to better support Fleet-maintenance requirements: the impulse washer is now longer, with a stainless-steel manifold, as a result of USS *John Hancock* crew comments. A different large, top-loading parts washer also is being tested for the first time and will support the ship's new, to-be-installed corrosion-control center. The paint-gun cleaning station now also cleans paintbrushes, which will save time. The paint dispensers also have a new functionality: two-part paint dispensing. With a metering-system board, two paint dispensers are siphoned through a shared dispensing mechanism, quickly releasing equal amounts of two-component paints. This will not only save time, it will reduce the waste and potential mess from measuring and mixing two separate containers of paint.

Unique to the *Rushmore* will be an onboard corrosion-control center. With this facility, the ship can apply on board (to approved parts and equipment) *thermoplastic coatings*, which resist corrosion better than standard paints and coatings and require less shipboard maintenance.

In addition to being the West Coast Smart Ship, the *Rushmore* is the test ship of the "Gator 17" Program, which was established as "a bridge between today and the future in amphibious transport dock." As such, P²A successes and lessons learned on the *Rushmore* will be transitioned to the LPD-17-Class ship—the amphib of the 21st century!

Your P²A program POC: Ms. Mary Jo Bieberich, NSWCCD Code 632, 301/227–4978, DSN 287, bieberic@oasys.dt.navy.mil

Welcome, LCDR Rinda Ranch, to CNO (N45)!

CNO IS PROUD TO ANNOUNCE THE ADDITION of *LCDR Rinda Ranch* to the N45 team. LCDR Ranch is in charge of Special Projects, which currently include the Living Marine Resources Program, P²A, and ozone-depleting substances.

LCDR Ranch successfully completed several Fleet assignments, including deployments on the USS *Rushmore* (LSD-47), USS *Samuel Gompers* (AD-37), and USS *Niagara Falls* (AFS-3). As an Amphibious Ship First Lieutenant, she was in charge of many of the tasks that are directly related to the environmental programs she now oversees. This hands-on perspective benefits both the policy makers and the crewmembers. Not only can Rinda assure that the directives are practical, but she also can influence the development of alternative solutions that would be of greater value to the Fleet.

LCDR Ranch holds a Bachelor of Science degree in Biology from the University of Southern Colorado.

LCDR Rinda Ranch

Farewell, Ozone Team Members Ms. Cyr, Mr. Unkel, and Mr. Thill

THE CFC & HALON ELIMINATION Team says good-bye to three valuable members. In January, *Ms. Catharine Cyr* accepted a 1-year Congressional fellowship on Capitol Hill. Ms. Cyr was in charge of the ODS Elimination Program at CNO (N45). In her absence, LCDR Rinda Ranch (see article above) will fill in.

Mr. Bruce Unkel, Head of NAVSEA's AC&R/Chilled Water Systems Branch (SEA 03L22), retired from Government service earlier this year. He will continue his service to the Navy in his new job as a Navy support contractor.

Mr. Joe Thill of NAVSEA's CFC & Halon Elimination Branch (SEA 03L14) will retire from Government service in July 1998. Mr. Thill heads the Fleet CFC-12 to HFC-134a Conversion Program. Joe will be leaving NAVSEA to spend more time with his family and improve his golf game.

The CFC & Halon Elimination Team will miss the services of Catharine, Bruce, and Joe and their contributions toward an ozone-friendly Navy.

Available Now at the Clearinghouse Web Site: www.navyseic.com

Under "What's Hot or New"...

- *Order Free Copies of Navy Environmentally Sound Ship Posters.* Great to celebrate—well beyond Earth Day!
- *Shipboard Solid Waste Equipment Management Guide* (PDF*). Ship information you need to operate and maintain the recently installed plastics waste processors, metal/glass shredders, and large and small pulpers effectively. Valuable lessons learned, based on substantial crew feedback from various ship Classes.
- *Shipboard Oil Pollution Abatement Systems Guidebook* (PDF*). General information from NAVSEA for technicians to understand a surface ship's oil/water separator and oil-content monitor.
- *Ultrafiltration Membrane Polishing System for Shipboard Treatment of Oily Wastewater* (PDF*). A paper given at the November 1997 ASNE Environmental Symposium ("Environmental Stewardship: Ships and Shorelines") discusses the Navy's research into an ultrafiltration membrane polishing system.

Also at the SEIC Web Site...

Environmental Laws and Regulations: Everything you need to know about APPS, MARPOL, the Montreal Protocol, more.

THE RDT&E Page now includes HAZMAT/P² programs under the Waste Management Technologies area. The following information is available:

- HAZMAT Control & Management
- HAZMAT Minimization Center
- Pollution Prevention Afloat (P²A)
- Other P² Opportunities (DD-963 Class)

The updated Solid Waste Page includes:

- *CVN-68-Class Solid Waste Flow Analysis Paper* (PDF*) by LCDR Stephen P. Markle and Mr. Sean E. Gill (Proceedings of the ASE 35th Annual Technical Symposium, April 1998)
- NAVSEA Fleet Advisories & Lessons Learned for the Plastic Waste Processor

Elsewhere on the Web...

- *EPA CAA Section 609 Final Rule* (PDF*). Download a copy from the Department of Energy Office of Environmental Policy and Assistance Web page: *http://tis-nt.eh.doe.gov/oepa/rules/62fr68026.pdf*

*To read PDF files, you will need a copy of the Adobe Acrobat Reader. If you do not have it already, download it for free from Adobe's Web page: *http://www.adobe.com/prodindex/acrobat/readstep.html*

Alphabet Soup for Non-Navy Types

What do all those acronyms mean, anyway? A quick-reference glossary:

AC&R: Air conditioning and refrigeration
APPS: Act to Prevent Pollution from Ships
ADM: Admiral
ASN (R,D&A): Office of the Assistant Secretary of the Navy for Research, Development, and Acquisition
ASNE: American Society of Naval Engineers
CAPT: Captain
CFC: Chlorofluorocarbon
CDR: Commander
CNO: Chief of Naval Operations
DOD: Department of Defense
DUSD (ES): Office of the Under Secretary of Defense for Environmental Security
EPA: Environmental Protection Agency
ESS-21: Environmentally Sound Ship of the 21st Century
FY:Fiscal year
HCFC: Hydrochlorofluorocarbon
HFC: Hydrofluorocarbon
HM: Hazardous material(s)
lb: Pound
LCDR: Lieutenant Commander
MACHALT: Machinery Alteration
MARPOL: International Convention for the Prevention of Pollution from Ships
MILSPEC: Military specification
MSG: Message
NATO: North Atlantic Treaty Organization
nm: Nautical mile
NAVAIR: Naval Air Systems Command
NAVFAC: Naval Facilities Engineering Command
NAVSEA: Naval Sea Systems Command
NAVSUP: Naval Supply Systems Command
NSN: National Stock Number
NSWC: Naval Surface Warfare Center
NSWCCD: Naval Surface Warfare Center, Carderock Division
ODS: Ozone-depleting substance
ONR: Office of Naval Research
OPNAV: Office of the CNO (above)
OPNAVINST: OPNAV Instruction
P²A: Pollution Prevention Afloat
PMS: Planned Maintenance System
ppm: Parts per million
POC: Point of contact
PRIME: Plastics Reduction in the Marine Environment
RADM: Rear Admiral
R&D: Research and development
RDT&E: Research, development, test, and evaluation
SHIPALT: Ship Alteration
SSES: Ship Systems Engineering Station
SYSCOM: Systems Command
T&E: Test and evaluation
TYCOM: Type Commander
UNDS: Uniform National Discharge Standards
WRAPS: Waste Reduction Afloat Protects the Seas

Spotlight on SEA 03L's Ye-Ling Wang and NSWCCD's Mary Jo Bieberich

Ms. Ye-Ling Wang

Ms. Mary Jo Bieberich

Ms. Ye-Ling Wang, a mechanical engineer with SEA 03L, manages the shipboard solid waste pulper and shredder (ACAT IV) programs. She is responsible for the continuing equipment development, procurement, program planning, budgeting, and Fleetwide integration.

Prior to her current position, Ms. Wang was a DOD Legislative Fellow in the Senate Environment and Public Works Committee, focusing on Superfund reauthorization. She also worked for DUSD (ES), ASN (R,D&A), ONR, and EPA, drafting policies and guidance regarding environmental protection's role in DOD acquisition and preparing staff work on various environmental issues.

From 1987 to 1992, Ye-Ling was the environmental coordinator for Navy field stations and laboratories and a project engineer in surface-ship torpedo fire-control systems and keel sonar domes. Before joining NAVSEA, she was a development engineer for Advanced Engineering and Planning Corporation and the Celanese Fibers Company.

Ms. Wang earned a Master of Engineering Administration degree from Virginia Polytechnic Institute and a Bachelor of Science degree in Chemical Engineering from the University of Maryland. She also completed the Program Manager's Course at the Defense Systems Management College and the Executive Program at Darden Business School of the University of Virginia.

Ms. Mary Jo Bieberich heads the Pollution Prevention and Material Safety Branch (Code 632) of the Environmental Quality Department at NSWCCD. Ms. Bieberich is responsible for a variety of research, development, test, and evaluation programs focused on shipboard and shoreside pollution abatement. These include managing and controlling HM aboard surface ships and submarines, introducing commercial off-the-shelf P²A equipment and practices aboard ships, and reducing hazardous wastestreams resulting from maintenance processes conducted pierside, such as hull-paint application and removal.

Currently, one of the most intense efforts in Ms. Bieberich's branch is the transition of P²A equipment from shipboard test and evaluation to Fleetwide implementation. A jump-start program has been planned for FY 1999, which will lead into a full Fleet modernization program in FY 2000. These efforts are being executed under the direction and management of the Environmental Protection Systems Life Cycle Manager, Mr. Joel Krinsky, NAVSEA 03L1.

Ms. Bieberich holds a Master of Science degree from the Johns Hopkins University in Environmental Science and Policy and a Bachelor of Science degree in Chemistry from the University of North Carolina at Chapel Hill.

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Calendar of Events & Important Dates

- **Third Friday of Each Month:** *ASNE Committee on Environmental Engineering's Lunch-Time Seminars;* 1200–1300 hours (bring your lunch); held at various offices in Arlington, VA; POC: David Breslin, Breslin_David@hq.navsea.navy.mil
  - **June 19, 1998:** *United States/United Kingdom Environmentally Sound Warship Feasibility Study;* Ms. Lyn Carroll, NAVSEA (PMS400)
  - **July 17, 1998:** *Green Energetics Materials;* Mr. Marc Magdinec, NSWC Indian Head
  - **August 21, 1998:** *U.S. Navy's Ozone-Protection Program;* Mr. Greg Toms, NAVSEA 03L14
  - **September 18, 1998:** *Fuel-Efficient Hull-Form Designs;* Mr. Gabor Karafiath, NSWC Carderock Division
- **14–18 June 1998:** *The Air & Waste Management Association's 1998 Annual Meeting and Exhibition;* San Diego Convention Center, San Diego, CA; POC: Mr. Kevin Wander, 412/232–3444 x3137
- **23–25 June 1998:** *Annual Navy Pollution Prevention Conference;* National Airport Hilton Hotel, Arlington, VA; POC: Ms. Kathi Jones, NFESC, 805/982–4899, DSN 551–4899; kjones@nfesc.navy.mil
- **21–23 July 1998:** *Navy Water Conference;* Hyatt Crystal City, Arlington, VA; POC: Ms. Maude Bullock, 703/602–1738
- **21–22 July 1998:** *Annual Oil Pollution Abatement Equipment Meeting*; San Diego, CA: POC: Brad Smith, 703/602–0351 x105
- **4–6 August 1998:** *Navy Clean Air Act Conference;* Hyatt Crystal City, Arlington, VA; POC: Ms. Kathy Ellis, 703/602–2568; ellisk@n4.opnav.navy.mil
- **24–25 August 1998:** *Annual Fleet/NAVSEA Eastern Solid Waste Conference;* Naval Base Norfolk, VA (Club Pier 26, Building 8-360); POC: LCDR Steve Markle, NAVSEA 03L1B, 703/602–8144, x 207, Markle_Stephen_P_LCDR@hq.navsea.navy.mil
- **25–28 August 1998:** *Annual Joint Service Pollution Prevention Conference and Exhibition;* San Antonio, TX; POC: Ms. Christy Kline, National Defense Industrial Association (formerly ADPA/NSIA), 703/522–1820, fax 703/522–1885
- **10–11 September 1998:** *Annual Fleet/NAVSEA Western Solid Waste Conference;* San Diego, CA (NAS North Island, Island Club, Trident Room); Naval Base San Diego will provide bus transportation to and from the conference. POC: LCDR Steve Markle, NAVSEA 03L1B, 703/602–8144, x 207, Markle_Stephen_P_LCDR@hq.navsea.navy.mil
- **26–28 October 1998:** *Earth Technologies Forum (formerly The International Conference on Ozone-Protection Technologies);* Washington, DC; POC: 703/807–4052, fax 703/243–2874; http://www.earthforum.com/

☞ Also check out calendars on the Web at the Navy SEIC Web site at *http://www.navyseic.com/calendar.htm;* and DENIX at *http://www.denix.osd.mil/denix/Public/Calendar/display.cgi*

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What Is the Clearinghouse?

The purpose of the Navy Shipboard Environmental Information Clearinghouse is to provide one-stop shopping for the Fleet and inform the Navy community on all shipboard environmental issues: policy, people, R&D, ozone-depleting substances, solid waste, liquid waste, hazardous materials, Uniform National Discharge Standards, and Pollution Prevention Afloat (P^2A) success stories. Our extensive resources include *but are not limited to* the following:

- **Policy and Regulations.** Copies of Navy advisories, directives, instructions, and regulations.
- **Status of Shipboard Environmental Equipment Installations.** Updates on the latest technology on board ships.
- **Vendor Information.** Prices; availability; product information (MSDS, technical data sheets, and CAS #); technical reports; and user experience.
- **Alternative Chemicals.** Facts on existing and newly developed alternatives or processes including vendor, toxicity, and application data.
- **Status of Military Documents Requiring Modifications.** Specifications, maintenance requirement cards, technical manuals, etc.
- **Miscellaneous.** EPA technician-certification programs; information from industry and professional organizations; EPA rules; more.

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